

THE AFROTROPICAL *OMMATIUS FLAVIPENNIS* SPECIES GROUP
(DIPTERA: ASILIDAE), WITH DESCRIPTIONS OF SIX NEW SPECIES

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Abstract.—A new Afrotropical species group, *Ommatius flavipennis*, including six species (*O. angustus*, n. sp., *O. callidus*, n. sp., *O. flavipennis*, n. sp., *O. nigrantis*, n. sp., *O. perneccarius*, n. sp., and *O. perscientus*, n. sp.) are reported. The species group and species are diagnosed, described, and compared with similar species. Illustrations of the right wing of the male and terminalia of all species and a key to the species are provided. Comments on the distribution are included.

Key Words: Diptera, Asilidae, *Ommatius* Wiedemann, *flavipennis* species group, new species, Afrotropical

Ommatius Wiedemann (1821) is a large, widespread Ommatiine (Diptera: Asilidae) genus in the Afrotropics that has received little attention until recently (Scarborough and Marascia 1996, 2000; Scarborough 2002a). Eighty species (Oldroyd 1980) are assigned to this genus of which 46 are from Africa. However, preliminary studies indicate that a considerable number of undescribed species from Africa will require formal names and descriptions. Several additional taxonomic problems exist within this genus that must be resolved before phylogenetic relations can be accessed and comprehensive keys to the African species can be constructed. Thus far the genus *Emphysomera* Schiner (1996, 1999) and the subgenus *Metonomatius* (Scarborough and Marascia 2000) have been revised. Further, we redescribed two species, designated types for *O. tenellus* van der Wulp and designated a replacement name (*O. abdelkuriensis* Scarborough) for *O. tibialis* Richardo (Scarborough 2002a). The purpose of this paper is to report a new Afrotropical species group, *O. flavipennis*, including six new species.

METHODS

The descriptive terminology follows McAlpine (1981). Dissections of the terminalia and preparation of illustrations of external and internal parts follow Scarborough and Marascia (1999, 2000) and Scarborough (2002b). Descriptions are composites of all specimens examined. In recording label data, each line is demarcated by a slash (/). Square brackets are used for additional information not present on labels. Ratios used in the descriptions are as follows: Head-face ratio [HFWR] = the greatest anterior distance across divided by the width of the face at the base of the antenna; flagellum width-length ratio [FWLR] = the length divided by the greatest width of the flagellum; cell m_1 width ratio [m_1 WR] = width at the basal third [widest] and apical two-thirds [narrowest] divided by the basal width; hind femoral width-length ratio [HFWLR] = the length of the hind femur divided by its greatest width. All measurements were made of pinned specimens. Structures in illustrations are labeled only for the first species and are not

repeated for comparable structures of the following species. Morphological structures illustrated in different positions have a single scale line.

Specimens used in this study are housed in the following Institutions: The Natural History Museum, London (BMNH); California Academy of Sciences, San Francisco (CAS); Canadian National Collection, Ottawa (CNCI); Natal Museum of South Africa, Pietermaritzburg (NMSA); Musée Royal de l'Afrique Centrale, Tervuren (MRAC); Muséum National d'Histoire Naturelle, Paris (MNHN); Hope Entomological Collection, The University Museum, Oxford (OXUM), and The Natural History Museum of Zimbabwe, Bulawayo (NMZB). Acronyms of institutions herein follow Arnett et al. (1993).

TAXONOMY

The Afrotropical *Ommatius flavipennis* species group

Diagnosis.—*Ommatius flavipennis* species are readily recognized by the following combination of characters. 1) Abundant, long setae below the head and proboscis, length about as long as proboscis; long flagellum, 1.7–3.0 longer than wide; dorsal facial setae usually long, $\frac{1}{3}$ – $\frac{1}{2}$ as long bristles. Anepimeral bristle present. 2) Wing (Figs. 1–6) mostly or entirely dense microtrichose. Cell r_4 long, narrowly triangular with base at or just beyond apex of cell d ; vein R_4 strongly arched basally, slightly concave or angled posteriorly before wing margin. 3) Middle and femora with 2 ventral rows of stout bristles, those of hind femur extend from base to or near apex. 4) Apical sternites of abdomen with sparse erect bristles except in *nigrantis* and *perscientus*. 5) Epandrium (Figs. 7, 17, 27, 47, 57) usually narrow except wide apically in *nigrantis*, apex pointed, curved dorsally in *nigrantis* (Fig. 37). 6) Aedeagus (Figs. 10, 20, 30, 40, 50, 60) tubular, flattened dorsoventrally, with wide base and apex, narrowed medially; ventral keel and flared apex present (Figs. 12, 22, 32, 42, 52, 62).

7) Spermatheca (Figs. 15, 25, 35, 55) long and tubular, with wide base and narrow apex, usually recurved or looped, except short, carrot-shaped in *nigrantis* (Fig. 45).

Remarks.—Whereas most *Ommatius* species are superficially similar externally, the structure of the terminalia is the primary means of identification of species and species groups. The long setation of the head, presence of two rows of ventral bristles below the middle and hind femora, length and shape of cell r_4 , and shape of the aedeagus readily separate the *flavipennis* species group from all known Afrotropical congeners. The length and shape of cell r_4 of *O. longipennis* (Linder 1955) is similar to all members of the *O. flavipennis* but differs in the other characters listed above. It is further similar to *O. perscientus* in the the narrow, mostly sparse setose face, thin brown tomentose mesonotum, and brown veins and microtrichia. However, *Ommatius perscientus* differs significantly from *O. longipennis* in the combined characters of the terminalia. Species of the subgenus *Metommatius* Hull (Scarborough and Marascia 2000) and *O. tenellus* van der Wulp (Scarborough 2002a) also differ in the presence of glabrous stripes or spots on the mesonotum, wing venation, and characters of the terminalia. The former differs further in the absence of marginal scutellar bristles and rows of ventral bristles below the middle and hind femora.

Distribution.—The species group is widespread in middle Africa, ranging from southern Ethiopia westward to Nigeria and southward to Angola and Zimbabwe. However, five species (*O. callidus*, *O. flavipennis*, *O. nigrantis*, and *O. perneccarius*, *O. perscientus*) are concentrated in the eastern half of the continent although *O. perneccarius* ranges westward to Nigeria. *Ommatius angustus* is known only from the Lubango and Huambo regions of Angola. All species were captured [where data given] between 1100 and 2100 meters in savanna and low mountain forests.

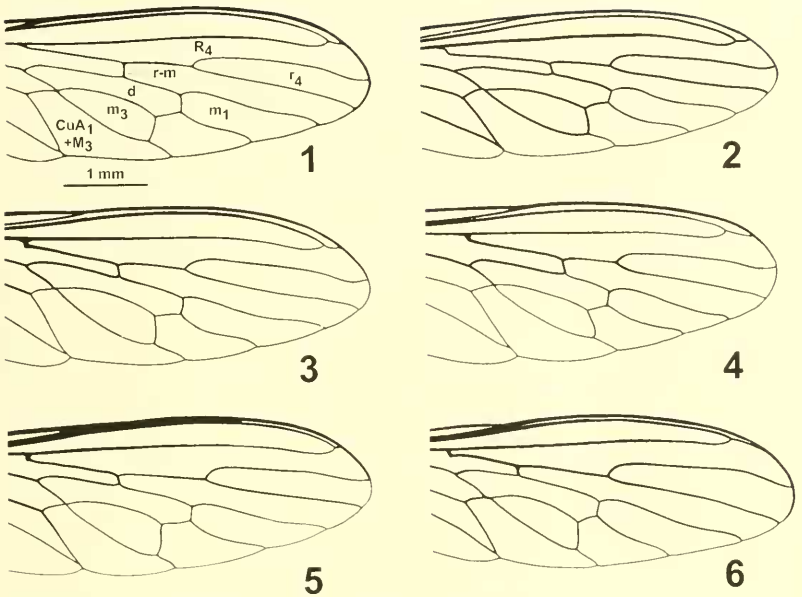
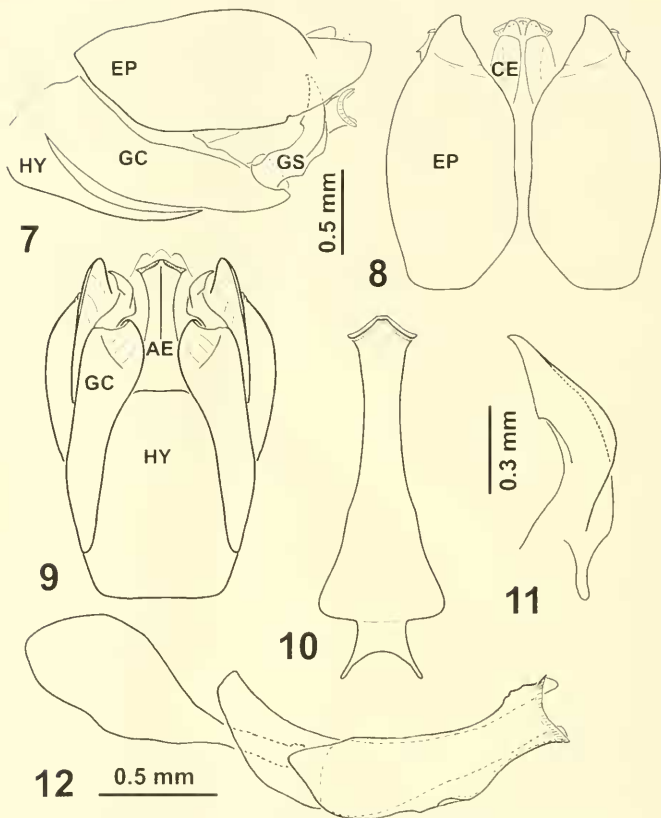


Fig. 1-6. *Ommatius* spp., right wing. 1, *O. angustus*. 2, *O. callidus*. 3, *O. flavipennis*. 4, *O. nigrantis*. 5, *O. pernecessarius*. 6, *O. perscientus*. R₁ = radial vein, r₄ = radial cell, r-m = radial-medial crossvein, d = cell d, m₁ = medial cell, m₃ = medial cell, CuA₁+M₃ vein.

KEY TO THE AFROTROPICAL *OMMATIUS*
FLAVIPENNIS SPECIES GROUP

- 1. Mesonotum dorsally brown tomentose, diffused paramedial stripes sometimes present; ocellar tubercle with 4-5 long setae; postocular bristles long, thin, strongly proclinate, apex of bristles well forward of posterior margin of eye; sternites of female with only thin setalike bristles
- 2. Fore and middle femora black, narrow base sometimes yellow; abdomen unusually flat, clavate apically; mesonotum posteriorly, scutellum entirely, and basal segments of abdomen gray tomentose; wing and terminalia as in Figs.

- 4, 37-46); Democratic Republic of Congo, Tanzania *nigrantis*, n. sp.
- Fore and middle femora yellow ventrally and posteriorly, dark brown dorsally and anteriorly; abdomen round in cross-section, neither flat nor spatulate; thorax and abdomen dorsally brown tomentose; wing and terminalia as in Figs. 6, 57-62); Zambia, Zimbabwe
- 2 *perscientus*, n. sp.
- 3. Mesonotum with most lateral bristles yellow; gonostylus with a prominent concavity posteriorly (Figs. 11, 21, 31); aedeagus narrow apically, base much wider in dorsal view, mid-basal 'shoulders' absent (Figs. 10, 20, 30), ventral keel variable (Figs. 12, 22, 32); sternite 8 of female with 1-4 prominent bristles apically, preapical, medioapical tubercle absent (Figs. 14, 24, 34); genital fork with narrow, constricted base (Figs. 26, 36, 46) 4
- Mesonotum usually with lateral bristles black; gonostylus without prominent concavity posteriorly (Fig. 51); aedeagus wide in dorsal



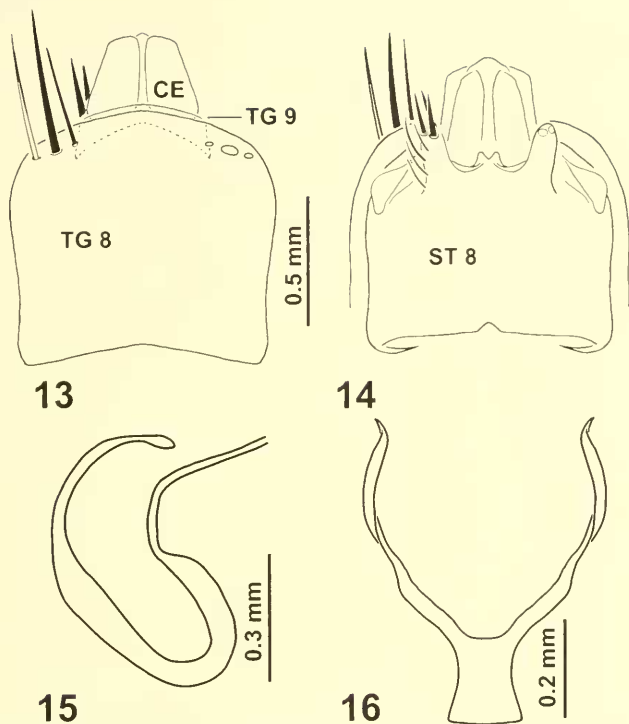
Figs. 7-12. *Ommatius angustus*, male terminalia. 7-9, Lateral, dorsal, and ventral views. 10, Aedeagus, dorsal view. 11, Left gonostylus. 12, Aedeagus, lateral view. AE = aedeagus, EP = epandrium, CE = cercus, GS = gonostylus, GC = gonocoxite, HY = hypandrium.

view, wide mid-basal 'shoulders' (Fig. 50) and strong ventral keel present (Fig. 52); sternite 8 of female without prominent bristles apically, a prominent, preapical, medioapical tubercle present (Fig. 54); spermatheca with a preapical constriction (Fig. 55); genital fork with wide base (Fig. 56); Burundi, Democratic Republic of Congo, Kenya, Malawi, Nigeria, Tanzania, Uganda, Zambia *pernecessarius*, n. sp.

4. Gonostylus angular (Figs. 27, 31); gonocoxite long, capitate apically in lateral view (Fig. 27); aedeagus unusually narrow in dorsal view, base abruptly wide (Fig. 30), prominent ventral keel

present (Fig. 32); apical margin of sternite 8 of female evenly contoured, hornlike process absent, 2 flat bristles present (Fig. 34); spermatheca as in Fig. 35; Democratic Republic of Congo, Zambia, Zimbabwe . . . *flavipennis*, n. sp.

— Gonostylus curved forward (Figs. 11, 21); gonocoxite shorter, sides even apically (Figs. 7, 9, 17, 19); aedeagus triangular in dorsal view, sides gradually widens posteriorly (Fig. 10, 20), keel as in Figs. 12, 22); apical margin of sternite 8 of female hornlike processes, each bearing prominent bristles (Figs. 14, 24); spermatheca as in Figs. 15, 25 5



Figs. 13–16. *Ommatius angustus*, female terminalia. 13–14. Dorsal and ventral views. 15. Spermatheca. 16. Genital fork. Abbr. TG8 = tergite 8, TG9 = tergite 9, CE = cercus, ST8 = sternite 8.

5. Gonostylus narrow, only slightly arched forward (Figs. 7, 11) aedeagus wide apically, apex oval, about as wide dorsally as laterally (Fig. 10), a moderate ventral keel present (Fig. 12); tergite 8 of female with lateral bristles oval, sides gradually narrowed from base to apex (Fig. 13); sternite 8 with deep, medioapical notch between prominent hornlike processes (Fig. 14); apex of spermatheca slightly swollen (Fig. 10); genital fork as in Fig. 11; Angola *angustus*, n. sp.
6. Gonostylus wide, strongly arched forward (Fig. 21); aedeagus narrow apically, apex much wider dorsally than laterally, a low ventral keel present (Figs. 20–22); tergite 8 of female with base of lateral bristles flat and wide, side abruptly narrows beyond (Figs. 23, 24); sternite 8 only slightly recessed, not strongly notched between short, hornlike processes

(Fig. 24); apex of spermatheca not noticeable swollen (Fig. 25); genital fork as in Fig. 26; Democratic Republic of Congo . . . *callidus*, n. sp.

TAXA

Ommatius angustus Scarbrough, new species (Figs. 1, 7–16)

Male.—Body 15.9–17.0 mm; wing 12.3–12.5 mm. *Head*: Face yellow tomentose, dorsal half with black vestiture, dorsal setae abundant, $\frac{1}{2}$ – $\frac{2}{3}$ as long as bristles; FHWR 1.0:7.1–1.0:7.5. Antenna, frons, and ocellar tubercle black setose. Flagellum about as long as scape and pedicel combined; FWLR

1.0:2.0—1.0:3.2. Frons light-brown tomentose, setae longer than scape. Ocellar tubercle with 2 long setae, length subequal to scape and pedicel combined. Dorsal postocular bristles short, mostly black, longest seta with tip just forward of eye posteriorly.

Thorax: Mesonotum with 2 wide, brown, tomentose, paramedial stripes, fused anteriorly, and 2 lateral spots; 4 dorsocentral bristles present, most black, 1–2 yellow; 5 lateral bristles yellow, 1 notopleural bristle black. Scutellum with scattered, long, yellow setae and 2 yellow marginal bristles; weak preapical groove present. Anepimeral bristle yellow.

Wing (Fig. 1): Entirely yellow to yellowish-brown microtrichose. Anterior radial vein mostly yellow, brown apically. Cell m_1 WR 1.0:1.8:1.6–1.0:1.9:1.6.

Legs: Femora mostly yellow with yellow bristles; fore and middle femora mostly black anteriorly, narrow apex black posteriorly; hind femur with narrow apex and narrow anterior stripe black, stripe present on apical $\frac{1}{3}$ – $\frac{2}{3}$; apical anteroventral bristle sometimes black. Middle femur with 4–5 ventral bristles in each row. HFWR 1.0:4.3–1.0:5.1. Narrow apex of middle and hind tibiae brown. Tarsi yellow setose; basal 3 tarsomeres yellow, narrow apices sometimes brown; fore and middle tarsi with numerous yellow bristles laterally; hind tarsus with only 1 yellow bristle.

Abdomen: Mostly yellow to yellowish-gray tomentose, yellow setose; tergites 5–7 sparse, brown tomentose dorsally, black setose; apical corner of tergites 2–8 with 2–4 stout, usually yellow, bristles; sternites 2–7 usually with 1–4 stout yellow bristles apically.

Terminalia: Black (Figs. 7–12). Gonostylus narrow in lateral view, concave posteriorly. Aedeagus triangular dorsally, basal corners wide; wide in lateral view; low ventral keel present.

Female.—Differs as follows. Body 14.5–19.5 mm; wing 10.8–12.5 mm; FHWR 1.0:6.6–1.0:6.7; FWLR 1.0:2.8–1.0:2.9; m_1 WR 1.0:2.1:1.9–1.0:2.5:2.4; HFWR 1.0:5.1–

1.0:5.6. **Head:** Occiput with 2–3 dorsal postocular bristles yellow. **Legs:** Fore tarsus with yellow bristles present on outer side only; hind femur with setigerous bristles only on basal $\frac{1}{2}$; hind tarsus with only black bristles. **Abdomen:** Most tergites laterally and sternites apically with 2–4 stout, bristles, latter mostly yellow. **Terminalia** (Figs. 13–16): Sternite 8 mostly black, narrow apex red; apical margin strongly produced as hornlike processes, apex with 3–4 stout, black bristles.

Specimens examined.—Holotype ♂, ANGOLA: (A6)/Tundavala/9 mls NW Saldade Bandeira [= Lubango, Huíla Plateau]/23.vii.1972/Southern/African Exp./B. M. 1972-1 (BMNH). Paratypes: 1 ♂, 3 ♀, same data as holotype (BMNH); 1 ♀, (A22), Nova Lisboa [= Huambo, Bié Plateau]/5–7.viii.1972/Southern/African Exp./B. M. 1972-1 (BMNH).

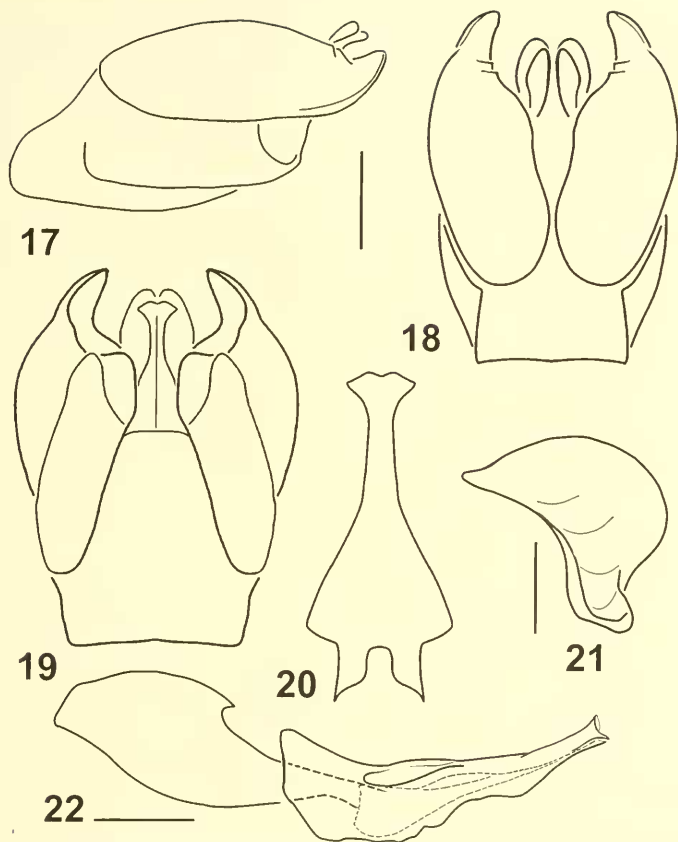
Etymology.—Latin *angustus* for narrow passage, referring to the gorge at Tundavala.

Distribution.—Montane species [elevation 1676 m] capture in July and August on the Huíla and Bié Plateaus of west central and south central Angola.

Remarks.—The long narrow flagellum, yellow thoracic and femoral bristles, and combined characters of the terminalia (Figs. 7–16) especially the gonostylus and aedeagus of the male and segment 8 and spermatheca of the female distinguish *O. angustus* from congeners.

***Ommatius callidus* Scarbrough,
new species
(Figs. 2, 17–26)**

Male.—Body 19.3–20.3 mm; wing 12.5–12.7 mm. **Head:** Face with yellow vestiture, setae on dorsal $\frac{2}{3}$ short, $\frac{1}{3}$ as long as bristles; HFWR 1.0:6.7–1.0:8.0. Antenna, frons, and ocellar tubercle black setose; pedicel rarely scattered yellow setose. Flagellum less than scape and pedicel combined; FWLR 1.0:1.9–1.0:2.2. Frons ventrally with setae slightly longer than scape. Ocellar tubercle with 2 setae about $\frac{2}{3}$ as



Figs. 17-22. *Ommatius callidus*, male terminalia. 17-19, Lateral, dorsal, and ventral views. 20, Aedeagus, dorsal view. 21, Left gonostylus. 22, Aedeagus, lateral view.

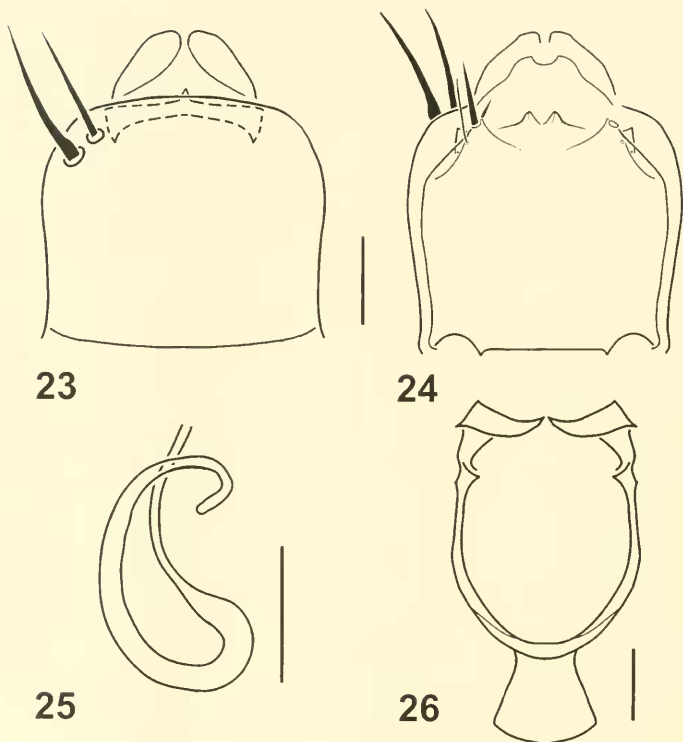
long as scape and pedicel combined. Postocular bristles yellow, rarely with 1-2 black; bristles short, longest with tip just forward of eye posteriorly.

Thorax: Mesonotum with 2 wide, brown, tomentose, paramedial stripes, fused anteriorly, and 2 lateral spots; bristles mostly yellow; 7-8 dorsocentral bristles present; 2-3 dorsocentral and 1 notopleural bristles usually black. Scutellum with long, yellow

setae and yellow marginal bristles; preapical groove absent. Anepimeral bristle yellow.

Wing (Fig. 2): Entirely yellow to brownish-yellow microtrichose. Anterior radial veins yellow basally. Cell m_1WR 1.0:2.3:2.0-1.0:2.8:2.3.

Legs: Femora mostly yellow, narrow apices brown; ventral bristles usually yellow; fore and middle femora mostly brown



Figs. 23–26. *Onnatius callidus*, female terminalia. 23–24, Dorsal and ventral views. 25, Spermatheca. 26, Genital fork.

anteriorly, hind femur anteriorly with narrow brown sometimes on apical $\frac{1}{3}$ – $\frac{1}{2}$. Middle femur with 2–3 black anteroventral bristles. HFWR 1.0:4.1–1.0:4.3. Narrow apex of 2, sometimes 3, tibiae brown. Tarsi mostly yellow setose; basal 3 tarsomeres yellow, narrow apices often brown; each tarsus with several yellow bristles.

Terminalia (Figs. 17–22): Gonostylus wide, strongly arched forward, wide concavity posteriorly. Aedeagus with wide apex and base in dorsal view; triangular, narrow in lateral view; ventral keel weak.

Female.—Body 17.3–18.3 mm; wing 15.0 mm; HFWR 1.0:6.2–1.0:7.3; FWLR

1.0:2.3–1.0:2.6; m_1 WR 1.0:2.3:3.0–1.0:3.0:2.6; HFWR 1.0:4.9–1.0:5.3. *Thorax*: Two to 4 dorsocentral and 2 notopleural bristles sometimes black. *Legs*: Fore and middle femora yellow, only narrow apex black; middle femur with 1 anterior and 2 anteroventral bristles black. *Abdomen*: Lateroapical margin of tergites and scattered on most sternites with yellow bristles. *Terminalia* (Figs. 23–26): Sternite 8 red, apical margin produced medially, short processes with 1–2 black bristles apically, each process separated medially by shallow concavity bearing a divided tubercle.

Specimens examined.—Holotype ♂,

DEMOCRATIC REPUBLIC OF CONGO: Musée du Congo/Lulua Riv. Luele/1928/Dr. Walker (MRAC). Paratypes: 5 ♂, 4 ♀, same data as holotype (MRAC).

Etymology.—Latin *callidus*, meaning skillful, refers to the hunting ability of asilids.

Distribution.—Captured along the Lulua River in southeastern Democratic Republic of Congo.

Remarks.—The short facial, frontal, and ocellar setae, the yellow postocular and mesonotal bristles, and combined characters of the terminalia (Figs. 17–26), especially the gonostylus and aedeagus of the male and segment 8 and spermatheca of the female distinguish *O. callidus* from congeners.

***Ommatius flavipennis* Scarbrough,
new species**

(Figs. 3, 27–36)

Male.—Body 13.9–17.3 mm; wing 9.8–11.2 mm. **Head:** Face with yellow and black setae dorsally, setae about ½ as long as bristles; FHWR 1.0:5.9–1.0:7.0. Antenna, frons, and ocellar tubercle black setose. Flagellum as long as scape and pedicel combined; FWLR 1.0:2.7–1.0:3.0. Frons brownish yellow to red-brown tomentose. Ocellar tubercle with longest setae about as long as scape and pedicel combined. Occiput with black postocular bristles usually extends to dorsolateral or midlateral margin of eye; dorsal bristles with apices just beyond posterior margin of eye.

Thorax: Mesonotum dorsally largely brown tomentose, paramedial stripes and lateral spots present in best specimens; 5 lateral and 5–6 dorsocentral bristles present, most black, often 2–3 dorsocentral and 2–3 lateral bristles yellow. Scutellum with scattered, long setae and yellow marginal bristles; shallow preapical groove present. Anepimeral bristles yellow.

Wing (Fig. 3): Entirely yellow to brownish-yellow microtrichose. Anterior 2–3 radial veins yellow basally. Cell m_1 WR 1.0:3.2:2.6–1.0:3.0:2.7.

Legs: Fore and middle femora dark

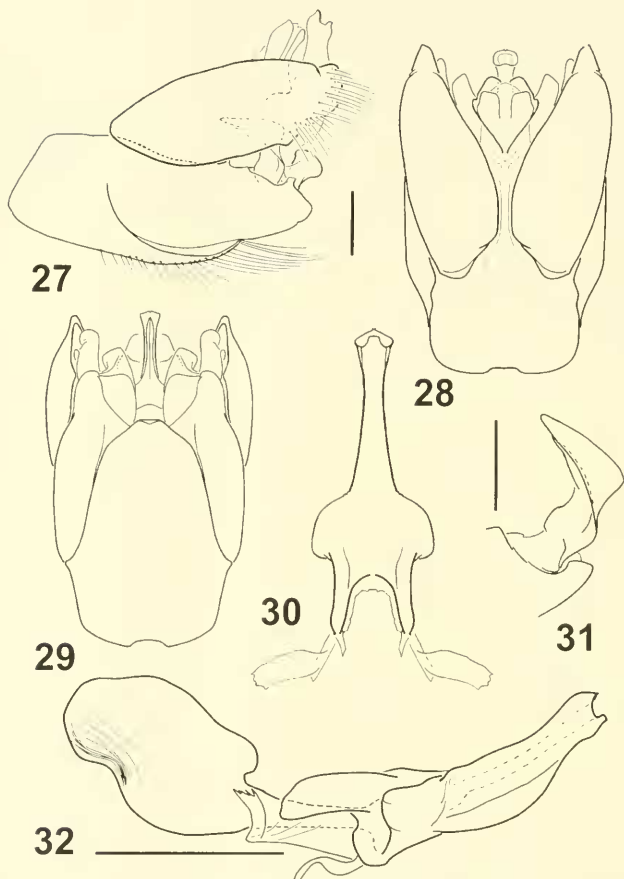
brown anteriorly and narrow apices posteriorly, yellow otherwise. Middle femur with 4 black bristles, 1 anteriorly and 3 anteroventrally; posteroventral bristles yellow. Hind femur yellow with narrow apex black, black variable anteriorly as a narrow or wide streak, often mostly black anteriorly; ventral bristles yellow; HFWLR 1.0:4.6–1.0:5.4. Tarsi mostly yellow setose; basal 2–3 tarsomeres light, usually yellow with apex brown; each tarsus with 5–12 yellow bristles.

Abdomen: Dark brown with yellow to yellowish-gray tomentum and yellow vestiture; each tergite dorsally with brown tomentum, light brown on basal segments, grading to dark tomentum on apical tergites. Apical margins of tergites 2–7 laterally with 2 yellow bristles; apical corner of sternites 3 and 4 with 1–2 thick yellow bristles, remaining sternites with bristly setae.

Terminalia (Figs. 27–32): Gonostylus strongly angular, L-shaped, deep concavity posteriorly. Gonocoxite apically capitate. Aedeagus narrow in dorsal view, base abruptly wide; wide in lateral view; prominently ventral keel present.

Female.—Differs from males as follows. **Face:** Dorsal ½–⅔ black setose; FWLR 1.0:3.1. **Legs:** Middle femur with only yellow bristles. Hind femur often with only narrow apex black. Basal 3 tarsomeres of fore and middle tarsi and basal 2 of hind tarsus mostly yellow. **Abdomen:** Apical margin of tergites 2 and 3 laterally with 3–4 and tergites 4–7 with 2 yellow bristles; tergite 8 with 3 black bristles. Sternites 3–7 with several, scattered, yellow bristles. **Terminalia** (Figs. 33–36): Sternite 8 with apical margin slightly produced medially, 2 flat, black bristles present mediolaterally.

Species examined.—Holotype ♂, ZAMBIA: Sakeji River [1400 m. elev.]/Ikelenge/N. Mwinilungo/Nat Mus Bulawayo/13–14.iv.1972/Pinley-de Moor Exp. (NMZB). Paratypes: DEMOCRATIC REPUBLIC OF CONGO: 1 ♂, 2 ♀, Congo Belge: P.N.U./Mbuywe-Bala (1,750 m)/25–31.iii.1948/Mis. G. F. de Witte (MRAC). ZAMBIA: 2



Figs. 27-32. *Ommatius flavipennis*, male terminalia. 27-29, Lateral, dorsal, and ventral views. 30, Aedeagus, dorsal view. 31, Left gonostylus. 32, Aedeagus, lateral view.

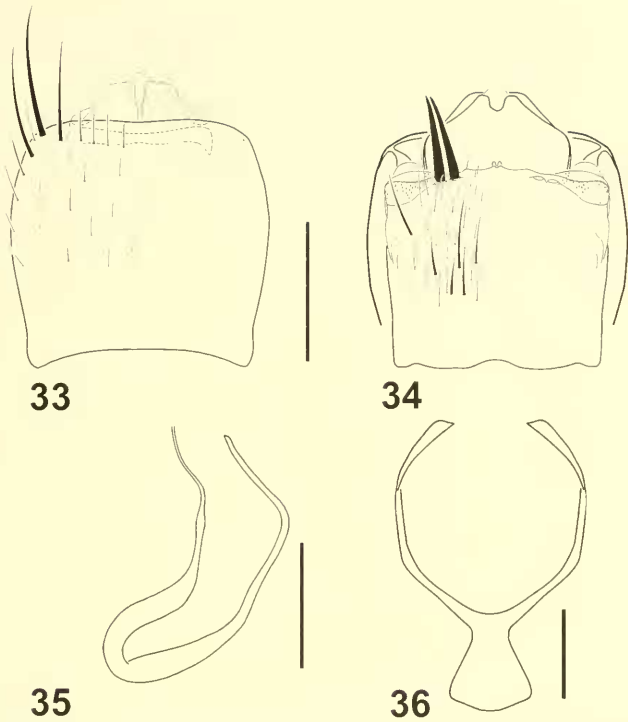
♂, 1 ♀, same data as holotype; 2 ♂. Mrushi R./80 m E of Kapiri/7.iii.1969/Pinhey-de Moor Exp (NMZB); 1 ♂. 35 mi S of Ndola/30.i.1965/Nat Museum S Rhodesia (NMZB). ZIMBABWE: 1 ♂, 1 ♀. Crocodile Pool Farm Blanket/Nat Museum S Rhodesia/15.xii.1977/D.K.B. Wheeler (NMZB).

Etymology.—Latin, *flavipennis*, combi-

nation of *flavus* for yellow and *pennis* for wing, referring to the color of the wing.

Distribution.—Captured from December through April at altitudes between 1400–1750 meters along the river basin Plateaus of southern Democratic Republic of Congo, Zambia, and Zimbabwe.

Remarks.—The narrow flagellum, black setae on the dorsal half of the face, and



Figs. 33–36. *Ommatius flavipennis*, female terminalia. 33–34, Dorsal and ventral views. 35, Spermatheca. 36, Genital fork.

combined characters of the terminalia (Figs. 27–36), especially the wide aedeagus with a midbasal constriction and prominent ventral keel, the short angular gonostylus, the capitate gonocoxite of the male and characters of segment 8 and spermatheca of the female distinguish *O. flavipennis* from congeners.

***Ommatius nigrantis* Scarbrough,
new species**
(Figs. 4, 37–46)

Male.—Black body with unusually long, yellow and black setae, black femora, and a flat, spatulate abdomen. Body 11.7–12.9

mm; 7.8–10.0 mm. *Head*: Face entirely with long vestiture of uniform thickness, thick bristles absent; vestiture ventrally more dense, about as long as proboscis, and yellow; that on dorsal $\frac{3}{4}$ of face black; HFWR 1.0:6.2–1.0:6.5. Antenna, frons, and ocellar tubercle black setose. Flagellum subequal to scape and pedicel combined; scape with long ventral setae extending beyond base of flagellum; FWLR 1.0:2.1–1.0:2.2. Frons yellow brown to brown tomentose; setae as long as scape and pedicel combined. Ocellar tubercle with several long setae, apex of longer seta well beyond base of flagellum. Numerous black post-

cular bristles present, bristles extending to or beyond midlateral margin of eye; bristles thin and strongly proclinate with apex of longest dorsal bristle at or just before ocellar tubercle.

Thorax: Mostly yellow to yellowish-gray tomentose. Mesonotum with wide, brown tomentose stripe medially and 2 spots laterally, paramedial lines indistinct; prescutellum broadly gray tomentose; vestiture mostly black and thin, anterior setae about as long as pedicel and scape combined; 9–10 long, setalike dorsocentral bristles present; 5–6 thick lateral bristles present, 1 often yellow. Scutellum with scattered black or yellow setae and 2 thin black bristles; longest setae as long as marginal bristles. Anepisternum dorsally with scattered black setae. Anepimeral bristle yellow.

Wing (Fig. 4): Entirely brownish yellow microtrichose. Veins brown. Cell m_1 WR 1.0:1.7:1.3–1.0:1.7:1.6.

Legs: Femora usually mostly dark brown or black with narrow bases yellow, rarely entirely dark; most bristles and setae yellowish to white; long ventral setae of fore and middle femora sometimes black; HFWR 1.0:5.6–1.0:5.8. Hind tibia with narrow apex black. Tarsi yellow setose; basal 2 tarsomeres yellow, narrow apices brown; bristles mostly black, 1–2 yellow fore tarsal bristles usually present.

Abdomen: Spatulate, junction of segments 2–3 $\frac{2}{3}$ as wide as segments 6–7; tergites 1–4, tergite 5 narrow base and sides, and most sternites with thin gray tomentum, apical tergites shiny brown or black with purple highlights. Setae mostly yellow, long laterally with sparse black or yellow bristles on most tergites; tergites 1–3 entirely yellow setose, tergite 4 yellow setose basally and black apically, tergites 5–8 entirely black setose.

Terminalia (Figs. 37–42): Narrow, about $\frac{1}{2}$ as wide as segment 6. Epandrium with apex flared, about as wide as base, small digitate ventroapical process present. Gonostylus narrowed apically, posterior con-

cavity absent. Aedeagus narrow apically, sigmoid, apex flared.

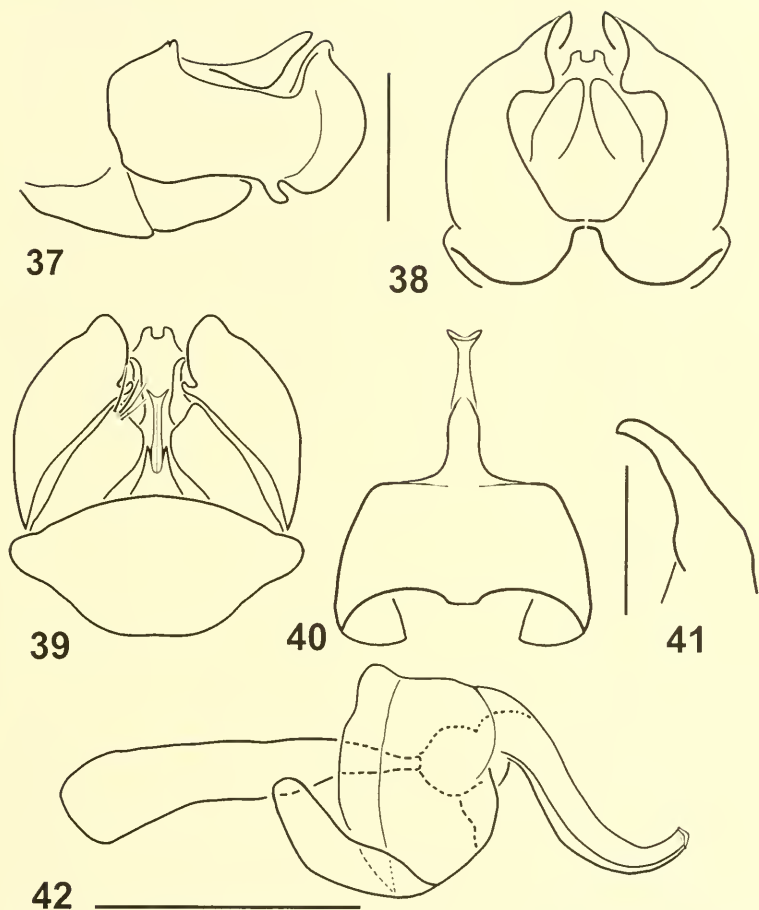
Female.—Differs as follows. Body 11.2–13.1 mm; wing 11.0–11.3 mm; FHWR 1.0:6.2–1.0:6.3; FWLR 1.0:2.2–1.0:2.7; m_1 WR 1.0:2.4:2.0–1.0:2.3:2.1; HFWR 1.0:5.3–1.0:5.4. *Abdomen:* Only slightly constricted at junction of segment 2–3, latter about $\frac{1}{5}$ as wide as segments 6–7; tergites dorsally mostly black setose; dull gray tomentum gradually thinning apically, apical segments bare; sternites with only scattered yellow setae and sparse, thin bristles laterally. *Terminalia* (Figs. 43–46): Tergite 8 with only thin bristles. Sternite 8 evenly contoured apically. Spermatheca short, straight, carrot-shaped. Genital fork with apex of arms capitate.

Specimen examined.—Holotype δ , TANZANIA: Iwawa/15 mls. N. W. of Mwakete/7000 ft/21.i.52 WP (BMNH). Paratypes: DEMOCRATIC REPUBLIC OF CONGO: 1 δ , Congo belge: P.N. U., Mukana (Lusanga) (1,810 m.)/6.iii.1948/Mis. G. F. de Witte. 1352a (MRAC); 2 ♀ [1 without tip of abdomen]/Congo belge: P.N. U./Mukana (1,810 m.)/4.iii.1948/22.23.iv.1949/Mis. G. F. de Witte. 1389a/2550a (MRAC); 1 δ , Congo belge: P.N. U./Kabwekanon (1,815 m.)/6.iii.1948/Mis. G. F. de Witte. 1367a (MRAC); 2 ♀ , Congo belge: P.N. U./Lusanga (près Mukana) (1,810 m.)/4.vi.1945/Mis. G. F. de Witte. 80–81 (MRAC).

Etymology.—Latin *nigrantis* for black or dusky, referring to the color of the legs.

Distribution.—Captured in montane forests (1810 to 2121 m. elev.) during March and April in western Tanzania and eastern Democratic Republic of Congo.

Remarks.—The mostly black femora with yellow bristles; the unusually long, black setae of the head; gray tomentum of the thorax and basal abdominal segments; the flat, spatulate abdomen; and the combined characters of the terminalia (Figs. 37–46) distinguish *O. nigrantis* from congeners. The unusually wide, dorsally oriented apex of the epandrium; narrow gon-

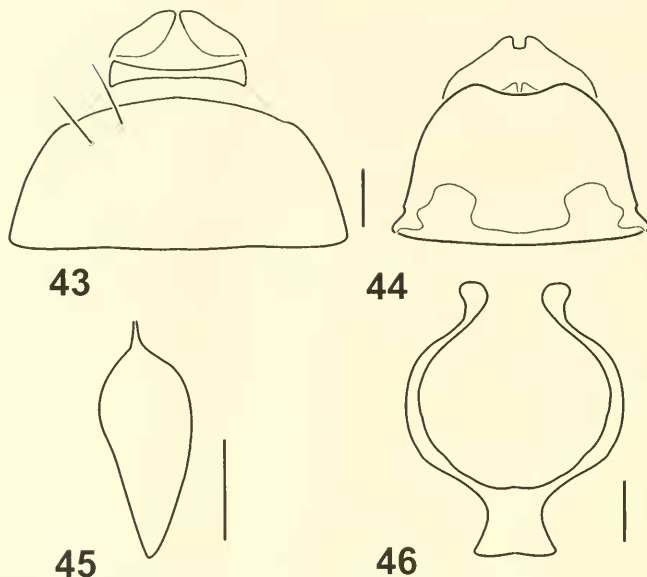


Figs. 37-42. *Ommatius nigrantis*, male terminalia. 37-39, Lateral, dorsal, and ventral views. 40, Aedeagus, dorsal view. 41, Left gonostylus. 42, Aedeagus, lateral view.

ostylus; and sigmoid aedeagus further distinguishes the male. Absence of scattered, stout bristles on the abdomen; a short, carrot-shaped spermatheca; and capitate arms of the genital fork further distinguish the female.

Ommatius pernecessarius Scarbrough,
new species
(Figs. 5, 47-56)

Male.—Body 11.0-14.4 mm; wing 9.6-10.5 mm. *Head*: Dorsal $\frac{2}{3}$ of face with



Figs. 43-46. *Ommatius nigrantis*, female terminalia. 43-44, Dorsal and ventral views. 45, Spermatheca. 46, Genital fork.

sparse black or mixed black and yellow setae, about $\frac{1}{3}$ as long as 6 black bristles; FHWR 1.0:6.0-1.0:7.0. Antenna, frons, and ocellar tubercle black setose. Flagellum slightly shorter than scape and pedicel combined; FWLR 1.0:1.7-1.0:2.3. Frons with setae as long as scape. Ocellar tubercle with setae slightly shorter than scape and pedicel combined. Occiput dorsally with 6-8 black postocular bristles; apex of longest just beyond posterior margin of eye.

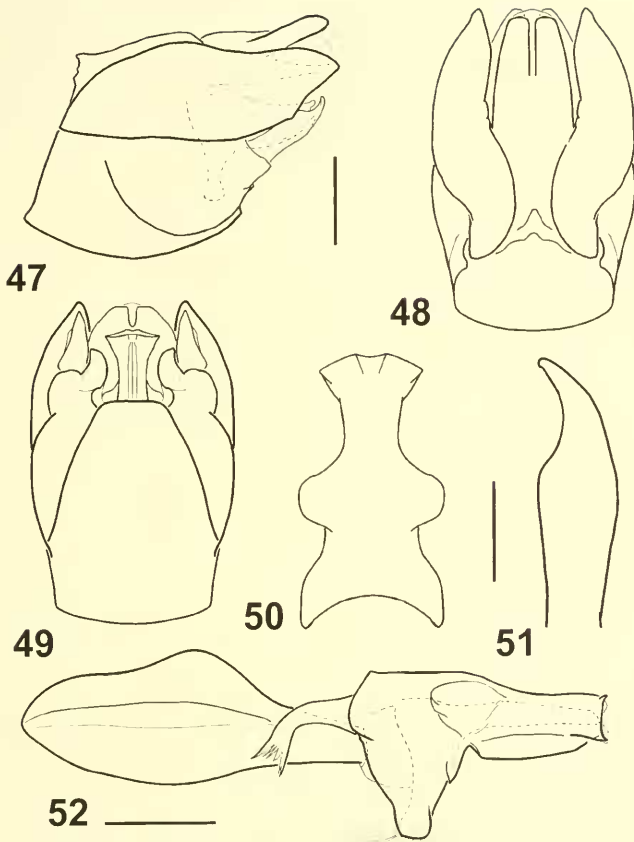
Thorax: Mesonotum with 2 wide, brown, tomentose, paramedial stripes, fused anteriorly, and 2 lateral spots; 5 lateral and 5-6 dorsocentral black bristles, 1-2 rarely yellow. Scutellum with scattered yellow setae and 2 black marginal bristles; preapical groove absent. Anepimeral bristle yellow.

Wing (Fig. 5): Dense yellow microtrichose; radial veins brownish yellow. Cell m_1 WR 1.0:2.3:2.0-1.0:5.0:4.5.

Legs: Fore and middle femora anteriorly

and narrow apices posteriorly black, otherwise yellow; hind femur variable, usually mostly yellow with narrow anterior streak and narrow apex black; all femora sometimes black anteriorly with narrow base yellow. Middle femur usually with only black bristles; 1-3 short black bristles usually present posteroventrally. Hind femur usually with most or all anterior and anteroventral bristles black, rarely bristles entirely yellow; posteroventral bristles usually yellow; HFWLR 1.0:4.4-1.0:5.0. Tibiae with narrow apices brown, sometimes light brownish yellow anteriorly. Tarsi yellow setose; basal tarsomere, sometimes second tarsomere, mostly yellow, apices narrowly brown; only black bristles present.

Abdomen: Mostly dense yellow tomentose, yellow setose; tergites medially brown with sparse black setae; sternites 3-7 and anterior margin of tergites laterally with yellow bristles.



Figs. 47–52. *Ommatius perneccarius*, male terminalia. 47–49, Lateral, dorsal, and ventral views. 50, Aedeagus, dorsal view. 51, Left gonostylus. 52, Aedeagus, lateral view.

Terminalia (Figs. 47–52): Gonostylus narrow, posterior concavity absent. Gonocoxite long, narrow apically, tightly wrapped around base of gonostylus. Aedeagus wide, strong prebasal constriction and prominent ventral keel present.

Female.—Differs as following. Body 10.8–14.2 mm; wing 10.5–11.7 mm: FHWR 1.0:5.8–1.0:6.3; FWLR 1.0:1.6–1.0:2.7; m_1 WR 1.0:2.5:2.4–1.0:4.7:4.7;

HFWR 1.0:5.0–1.0:5.4. **Head:** Face with 10–12 black bristles and dorsally mostly black setae. **Thorax:** Scutellum with marginal bristles always black, preapical groove often absent. **Wing:** Base of cell r_4 well beyond apex of cell d; r-m crossvein just beyond middle of cell d. **Legs:** Color of femora variable, blackish with narrow bases yellow to hind femur yellow with only narrow apex dark brown to black.

Hind femur posteroventrally with 3–5 longer, thinner yellow bristles. *Abdomen*: Most tergites apically with 3–4 thick, long, yellow bristles; tergite 8 with only short, black bristles; sternites 2–7 with few to several yellow bristles. Sternite 8 anteromedially reddish yellow to yellow, with a raised, oval tubercle, usually divided longitudinally. *Terminalia*: (Figs. 53–56). Sternite 8 with prominent medioapical tubercle; spermatheca constricted before apex, apex wider. Genital fork with short, wide base.

Specimens examined.—Holotype ♂, UGANDA: Budongo Forest nr Lk. Albert/1000 m/iv.1972/E. B. Babyetaqara (CNCI). Paratypes. DEMOCRATIC REPUBLIC OF CONGO: 1 ♂, 1 ♀, Musée Du Congo/Uelé Aba/14, 20.iv.1914/Dr. Rodhain (MRAC); 1 ♀, Musée Du Congo/Uelé: Van Kerkhevanville/Degreef (MRAC); 1 ♀, Musée Du Congo/Uala/xii.1932/A. Corbisier (MRAC); 1 ♀, Musée Du Congo/Iturl/Niarembe v.1921/Ch. Scops (MRAC); 1 ♀, Musée Du Congo/Dungu/iii.1920/P. Van den Plas (MRAC); 1 ♀, 7052 Lubwe/sur feuille Arbre/viv. 7.xii.55 Lips E' Villa, (MRAC); 1 ♀, 10 mi. S. of Kapona/13.i.58/1570 m/E. S. Ross &, R. E. Leech, (CASC). BURUNDI: 1 ♂, Mwaro/Gigoli/21.x.80/J. G. Pointel (MNH). ETHIOPIA: 1 ♂, Sidamo/Provience Dilla/3.vi.1974/Victor O. DeMasil/C. A. S. Accession (CASC). KENYA: 1 ♂, 2 ♀, Kakamega/v–vi.1950/Mrs. Adamson (BMNH); 1 ♀, KENYA: Kapsabet/10.v.1991/A. Freidberg & Fini Kaplan (NMSA). MALAWI: 1 ♂, 1 ♀, Nyasaland/Usangha distr. 35–4500 ft/29.xi–15.xii.1910/S.A. Neave (BMNH). NIGERIA: 1 ♂, 2 ♀, Obridu cr/SE state/25.iii.1971/J.T. Medler (BMNH). RWANDA: 1 ♂, Gabiro, Kegera Park/1325 m 8.xii.57/E. S. Ross & R. E. Leech (CASC). UGANDA: 1 ♀, N. Uganda: van Someren/Madi Opei n. u/v.51/Com. Inst. Ent. coll No. 12301 (BMNH); 1 ♂, 1909/Col. Sir D. Bruce/1909–155 [terminalia on slide S.58] (BMNH); 1 ♀, May 1914/Uganda Uny-/oro Hoima/3700 feet/Coll. Kitter-/bergerd dd '19/C. A. Wiggins (OXUM). TANZANIA: 1 ♀, Njombe/6000–6500 ft/Tanganyika/9.xii.1957 W. P.

(BMNH); 1 ♂, 1 ♀, 41 mi. N./of Kasulu 1150 m/19.xi.1967/K. S. Ross &/A. R. Stephan (CASC). ZAMBIA: 1 ♀, Lusaka/8.i.41/Frank M. Hull Collection (CNCI). COUNTRY UNKNOWN: 1 ♀, Y1, presented by/Imp. Bur. Ent./1921–9. [Prey mounted on separate pin] same data except *Lectis/bequaerti*/Lallen/det. in B. M./W. E. China [Cercopidae] (BMNH).

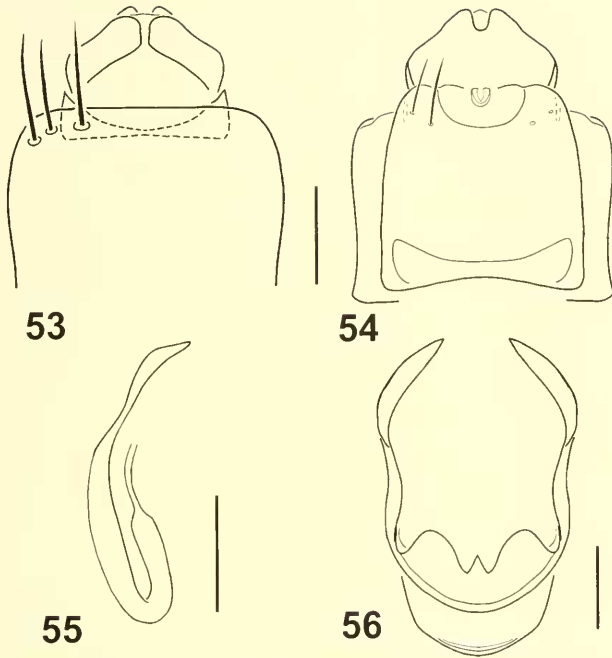
Etyymology.—Latin *pernecessarius* for 'very close by relation' referring to its similarity to others in this group.

Distribution.—Captured in October through June at altitudes between 1150 to 1900 meters from Southern Ethiopia westward to Nigeria and southward to Zambia.

Remarks.—The short flagellum; sparse, short setae on the dorsal half of the face; black thoracic, femoral, and tarsal bristles; and combined characters of the terminalia (Figs. 47–56) distinguish *O. pernecessarius* from congeners. The shapes of the gonostylus, gonocoxite, and aedeagus readily characterize the male. The raised, oval, preapical tubercle on sternite 8, the preapically constricted spermatheca, and wide, short base of the genital fork further characterize the female.

Ommatius perscientus Scarbrough,
new species
(Figs. 6, 57–62)

Male.—Body 8.7–14.2 mm; wing 7.3–9.8 mm. *Head*: Face yellow tomentose, several, thin, black bristles and sparse setae present on dorsal $\frac{2}{3}$; thick yellow bristles and abundant long setae present on ventral $\frac{1}{3}$; FHWL 1.0:8.1–1.0:9.8. Antenna, frons, and ocellar tubercle black setose. Flagellum short, as long as scape; FWLR 1.0:1.5. Frons yellowish-brown tomentose; setae short, longest seta slightly longer than scape. Ocellar tubercle with 2 setae as long as 3 antennomeres combined. Occiput mostly thin brownish-gray tomentose, eye margin narrowly dense yellowish gray; scattered black setae present dorsally; long, thin, black postocular bristles extend beyond midlateral margin of head, longest



Figs. 53–56. *Ommatius perneccarius*, female terminalia. 53–54, Dorsal and ventral views. 55, Spermatheca. 56, Genital fork.

dorsal bristle with tip well before posterior margin of eye.

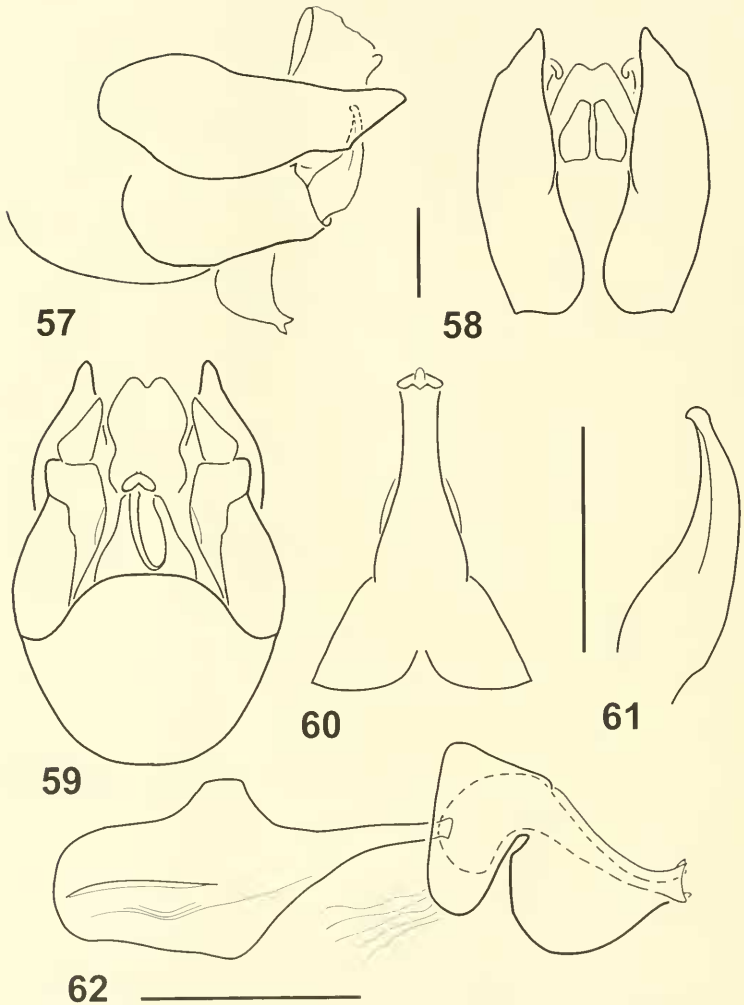
Thorax: Mesonotum brown tomentose dorsally, distinct paramedial stripes and lateral spots absent; bristles black; 4 dorsocentral bristles present, wide spaced with first at of just behind transverse suture. Scutellum brown tomentose dorsally, apical margin gray; scattered black setae and 2 black marginal bristles present; weak preapical groove present. Anepimeral bristle black; anepisternum dorsally scattered black setose.

Wing (Fig. 6): Dense, black microtrichia present beyond r-m crossvein; veins dark brown. Cell m_1WR 1.0:2.1:1.9–1.0:2.9:2.6.

Legs: Coxae with stout bristles. Femora mostly black; fore and middle femora yellow ventrally and posteriorly except at

apex; hind femur yellow on basal fourth to third. Middle femur with black bristles anteriorly and anteroventrally; posteroventral bristles variable, all yellow, black, or mixed with apical bristles black. Hind femur with anterior and anteroventral bristles variable, entirely yellow or black, if mixed then 1–3 basal anteroventral bristles yellow; posteroventral bristles entirely yellow or 3–4 apical bristles black; HFWLR 1.0:5.0–1.0:5.2. Tibiae yellow except brown as follows: narrow apex of fore and middle tibiae and apical half of hind tibia; bristles black. Tarsi mostly black, basal tarsomere of fore and middle tarsi mostly yellow, narrow apex black; bristles black.

Abdomen: Black, apical margin of most segments dull yellow to yellowish brown.



Figs. 57-62. *Ommatius perneccarius*, male terminalia. 57-59, Lateral, dorsal, and ventral views. 60, Aedeagus, dorsal view. 61, Left gonostylus. 62, Aedeagus, lateral view.

Terga mostly thin, brown tomentose, basal segments brownish gray laterally; black setose; apical corner of terga 4-8 with 1-4 thin, black bristles. Sterna brownish-gray

tomentose, mostly pale yellow setose; sternites 6-7 with scattered, short, black setae; sternum 8 with only black vestiture.

Terminalia (Figs. 57-62): Gonostylus

narrow apically, posterior groove absent. Aedeagus slightly sigmoid with a prominent ventral keel.

Female.—Unknown.

Specimens examined.—Holotype ♂, ZIMBABWE: Mt. Selinda/Nov–Dec 1930/R. H. R. Stevenson (OXUM). Paratype, ZIMBABWE: 1 ♂, [without abdomen], same data label as holotype (OXUM); 1 ♂, Vumba Mts./S. Rhodesia/29.xi.1934/Major Drysdale (OXUM). ZAMBIA: 1 ♂, Southern Rhodesia/Chitinda Forest/25.viii–2.v.1907/C. F. M. Swynnerton/1915–426 (BMNH).

Eymology.—Latin *perscientus* for 'very skillful', alluding to the predaceous habit of asilids.

Distribution.—A montane species captured during August and November–December in eastern Zambia and Zimbabwe.

Remarks.—In addition to the characters in the key, the narrow face with sparse setae dorsally; dorsal postocular bristles proclinate with apices well forward of the posterior margin of the eyes; mesonotum with thin brown tomentum, paramedial stripes absent; wing with dense brown microtrichia beyond r-m crossvein; hind femur black except for narrow yellow base; apical half of hind tibia black, and terminalia (Figs 57–62) characterize *O. perscientus*.

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